

Claims submitted 1/24/07

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21. (Amended) A method for coordinating a first level route directed workflow and an independent second level route directed workflow using an object step, the method comprising:

defining a first object step with an associated first route segment, a sequence of steps to be connected to other route segments;

defining a ~~fourth~~third object step with an associated ~~fourth~~third route segment, a sequence of steps to be connected to other route segments;

defining a first level workflow means, including an Enterprise Resource Planning (ERP) system, directed by an object route, a sequence of object steps;

defining an independent second level workflow means, including a shopfloor system, directed by a route, a sequence of steps;

defining a first object route, a sequence of object steps, including the first object step and ~~fourth~~third object step, providing conditional branches, parallel paths, and loops such that all connected object steps are included;

forming a first route from the first object route by connecting the route segments associated with each object step, including the first route segment and ~~fourth~~third route segment, in the sequence of the object steps of the first object route where the first route is independent of the first object route;

providing the first object route to direct the first level workflow means;

providing the first route to direct the independent second level workflow means;

such that ~~when the first level workflow starts the first object route, and the independent~~ second level workflow starts the first route; and, ~~when the independent~~ second level workflow completes the first route and, the first level workflow completes the first object route.

22. (Original) The method of Claim 21 wherein a second object step with an associated second route segment follows the first object step in the sequence of object steps of the first object route and the second route segment provides a feedback connection to the first route segment in-forming the first route.

23. (Amended) The method of Claim 21 wherein the first object step with an associated ~~third~~fourth route segment as an alternative route segment such that either the first route segment or the ~~third~~fourth route segment is selected when forming the first route.

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24. (Amended) The method of Claim 21 wherein the first route segment can ~~indicatesignals~~ to the first object step when the first route segment begins directing the second level workflow.
25. (Amended) The method of Claim 21 wherein the first route segment can ~~indicatesignals~~ to the first object step when the first route segment completes directing the second level workflow.
26. (Amended) The method of Claim 21 wherein the first route segment can ~~report signals~~ to the first object step the number of identifiers, including barcode and Radio Frequency Identifier (RFID), read by a step in the first route segment.
27. (Amended) The method of Claim 21 wherein the first route segment can ~~report to signals~~ the first object step the net number of identifiers, including barcode and Radio Frequency Identifier (RFID), read by a step in the first route segment by subtracting the number of identifiers read on a feedback path from the number of identifiers read.
28. (Amended) The method of Claim 21 wherein the first route segment can ~~reportsignals~~ to the first object step the identifier, including barcode and Radio Frequency Identifier (RFID), read by a step in the first route segment.
29. (Amended) A method for creating a detailed route to direct an independent detailed workflow, including a Shopfloor system, from a abstraction route defined to direct an abstraction workflow, including an Enterprise Resource Planning (ERP) system, using an object step, the method comprising:
defining a first object step with an associated first route segment, a sequence of steps to be connected to other route segments;
defining a ~~fourth-third~~ object step with an associated ~~fourth-third~~ route segment, a sequence of steps to be connected to other route segments;
defining a first abstraction route, a sequence of object steps including the first object step and fourth object step, providing conditional branches, parallel paths, and loops such that all connected object steps are included to direct an abstraction workflow to implement the abstraction level of a process;
creating a first detailed route from the first abstraction route by independently connecting the route segments, including the first route segment and fourth route segment, associated with each object step in the sequence of the object steps of the first abstraction route such that the first detailed route directs the detailed workflow to implement the detailed level of the process and the first abstraction route directs the abstraction workflow to implement the abstract level of the process.

30. (Original) The method of Claim 29 wherein a second object step with an associated second route segment follows the first object step in the sequence of the object steps of the first abstraction route and the second route segment provides a feedback connection to the first route segment in forming the first detailed route.

31. (Amended) The method of Claim 29 wherein the first object step with an associated ~~third-fourth~~ route segment as an alternative route segment such that either the first route segment or the ~~third-fourth~~ route segment is selected when forming the first detailed route.

32. (Amended) A system using an object step for coordinating an abstraction level workflow directed by an object route and an independent detailed level workflow directed by a route, the system comprising:

a first computer system connected to a network, including the Internet, and executing an abstraction level workflow program, including an Enterprise Resource Planning (ERP) system, directed by an object route, a sequence of object steps;

a second computer system connected to the network and executing an independent detailed level workflow program, including a Shopfloor system, directed by a route, a sequence of steps;

a first object step with an associated first route segment, a sequence of steps to be connected to other route segments;

a ~~fourth-third~~ object step with an associated ~~fourth-third~~ route segment, a sequence of steps to be connected to other route segments;

a first object route, a sequence of object steps, including the first object step and third object step, providing conditional branches, parallel paths, and loops such that all connected object steps are included;

a third computer system connected to the network and executing a conversion program to create a route from an object route by connecting the route segments associated with each object step in the sequence of the object steps in the object route where the connections are independent of the connections of the object route;

the third computer system and conversion program are provided the first object route and the conversion program creates a first route including the first route segment and ~~fourth-third~~ route segment;

the third computer provides the first object route to the first computer such that the abstraction level workflow program is directed by the first object route;

the third computer provides the first route to the second computer such that the independent detailed level workflow program is directed by the first route; such that ~~when the first object route begins directing the abstract level workflow, and the first route begins directing the~~ independent detailed level workflow; and, ~~when the first route completes, and the first object route is completed~~ completes.

33. (Original) The method of Claim 32 wherein a second object step with an associated second route segment follows the first object step in the sequence of the object steps of the first object route and the second route segment provides a feedback connection to the first route segment.

34. (Amended) The method of Claim 32 wherein the first object step with an associated ~~third-fourth~~ route segment as an alternative route segment such that either the first route segment or the ~~third-fourth~~ route segment is selected when forming the first route.

35. (Amended) The method of Claim 32 wherein the first route segment ~~can indicate to~~ signals the first object step when the first route segment begins directing the detailed level workflow.

36. (Amended) The method of Claim 32 wherein the first route segment ~~can indicate to~~ signals the first object step when the first route segment completes directing the detailed level workflow.

37. (Amended) The method of Claim 32 wherein the first route segment ~~can report~~ signals to the first object step the number of identifiers, including barcode and Radio Frequency Identifier (RFID), read by a step in the first route segment.

38. (Amended) The method of Claim 32 wherein the first route segment ~~can report~~ signals to the first object step the net number of identifiers, including barcode and Radio Frequency Identifier (RFID), read by a step in the first route segment by subtracting the number of identifiers read on a feedback path from the number of identifiers read.

39. (Amended) The method of Claim 32 wherein the first route segment ~~can report~~ signals to the first object step the identifier, including barcode and Radio Frequency Identifier (RFID), read by a step in the first route segment.